

- aa. Upper mandible black; no concealed white bars on the feathers of the upper parts.
- b. Size larger; wing 265–301 mm., in males; 268–321 mm. in females.
- c. Bill smaller; culmen from cere less than 45 mm.
- d. Plumage gray or dark gray, barred beneath with gray or dark gray and white.
- e. Ground color of under parts dark blackish plumbeous, white bars wide (about 5 mm.).....*C. u. aquilonis* ad. ♂
- ee. Ground color of under parts paler, deep plumbeous; white bars narrow (1.5–3 mm.).....*C. u. uncinatus* ad. ♂
- dd. Plumage dark brown or blackish brown above, barred beneath with brown on white ground color or almost unbarred white.
- e. Under parts heavily barred.....*C. u. uncinatus* ad. ♀
C. u. aquilonis ad. ♀
- ee. Under parts nearly unbarred white.....*C. u. uncinatus* juv.
C. u. aquilonis juv.
- cc. Bill very large, culmen 50 mm.....*C. u. immanis* ad. ♀
- bb. Size smaller; wing 250 mm., in male; 262–266 mm.
In females (Grenada).....*C. u. mirus*.

I am much indebted to Mr. W. W. Bowen for assistance in compiling measurements and in working out the plumages of these birds. Dr. J. Van Tyne and Mr. L. Griscom also aided by sending notes and opinions about plumages and variations.

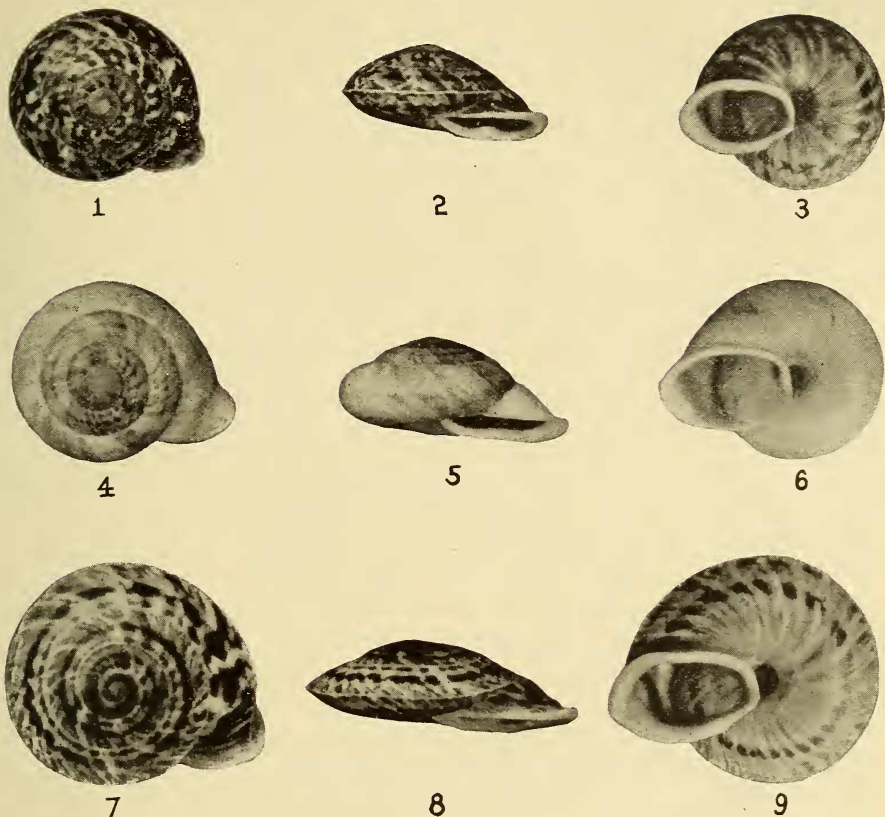
MALACOLOGY.—*New Philippine land shells of the genus Obba*.¹
PAUL BARTSCH, U. S. National Museum.

A sending of Obbas to the U. S. National Museum for determination by Mr. Walter F. Webb of Rochester, New York, has brought to light a number of new races, which are here described.

The mass of Philippine material before me belonging to the genus *Obba*, makes it possible to regroup some of the named forms in a more natural arrangement. Mr. Webb's recent sending makes it necessary to give consideration to the mollusks which were described by von Möllendorff (*Nachrichtsblatt der Deutschen Malakozoologischen Gesellschaft* 20: 87–88) as

- Obbina lasallei* Eydoux
Obbina lasallei forma *subcarinata* Mlldff.
Obbina lasallei forma *subcostata* Mlldff.
Obbina lasallei var. *obscura* Mlldff.

¹ Published by permission of the Secretary of the Smithsonian Institution. Received April 6, 1934.



Figs. 1-3.—*Obba listeri cabrasensis*.
 Figs. 4-6.—*Obba grandis marivelesensis*.
 Figs. 7-9.—*Obba listeri mayae*.

Obbina lasallei var. *grandis* Mildff.

Also those treated by him in 1898 in the *Abhandlungen der Naturforschenden Gesellschaft, Görlitz*, 22: 82-85. Here he renames the shell he described as *Obbina lasallei* above, *Obbina lasallei pallida*, and describes:

Obbina planulata subglobosa Mildff.

Obbina planulata edentula Mildff.

Obbina planulata subangulata Mildff.

Obbina planulata depressa Mildff.

Obba lasallei Eydoux typifies an entirely distinct group of forms whose conspicuous colored banding at once removes them from the present complex, which will have to carry one of the four names be-

stowed by von Möllendorff in 1888. Since von Möllendorff says that the first two named forms were each based upon a single aberrant individual which he found with what he then called *Obbina lasallei* Eydoux at Montalban, Luzon, these are best passed over.

Of the others, that is his var. *obscura* and var. *grandis*, the latter appears more appropriate. I shall therefore here select it for the specific designation of the group.

OBBA GRANDIS Von Möllendorff

The shell ranges from medium size to quite large. Ground color flesh-colored, variously mottled with flecks of dull brown, never actually spirally banded, though a series of spots, which are almost confluent a little posterior to the middle of the turns, suggests a narrow band on the upper surface of the whorls. Base with an obscure interrupted zone of dull brown at some distance anterior to the periphery. The last whorl has the outer lip decidedly deflected at the posterior angle, which gives it a pinched-in effect at this place. Peristome broadly expanded and reflected; basal lip without tooth, or at best with the merest suggestion of a median tumidity.

This species as now conceived ranges over central Luzon where it breaks up into a number of recognizable races or subspecies.

It resembles in size *Obba planulata* (Lamarck), but is less depressed than that species and lacks the strong basal tooth. It also suggests some of the races of *Obba sarcochroa* Möllendorff, but the absence of basal tooth at once distinguishes it from that species. *Obba marmorata* Möllendorff also suggests it, but here, too, we have a strong basal tooth present.

Obba grandis Möllendorff as here constituted embraces:

- Obba grandis grandis* Mlldff. Montalban (type locality).
- Obba grandis grandis* forma *subcarinata* Mlldff. Montalban.
- Obba grandis grandis* forma *subcostata* Mlldff. Montalban.
- Obba grandis obscura* Mlldff. Balabac.
- Obba grandis depressa* Mlldff. Morong.
- Obba grandis edentula* Mlldff. Morong.
- Obba grandis subglobosa* Mlldff. Sibul.
- Obba grandis subangulata* Mlldff. Zambales.
- Obba grandis marivelesensis* Bartsch. Mariveles.

Obba Grandis Marivelesensis, new subspecies

Figs. 4-6

Shell of medium size, lenticular, with moderately elevated, well rounded spire. Periphery feebly angulated. Base moderately well rounded and moderately openly umbilicated. Ground color flesh colored, with a pale buff tinge. The upper surface, particularly on the early postnuclear whorls, flecked and mottled with pale chestnut brown. On the early turns these flecks tend to form an interrupted median line and a second interrupted, less conspicuous line a little anterior to the summit and a third immediately above the suture, which is even fainter. The base is almost unicolor, the

color scheme being varied slightly by retractively curved, faintly brownish streaks coinciding with the incremental lines in placement. Aperture buff within; peristome white. Nuclear whorls 2, well rounded, the first smooth excepting incremental lines, and the last marked by incremental lines and fine spiral striations. The postnuclear whorls are well rounded and marked by fairly strong incremental lines, spiral striations and the microscopic crisscross sculpture characteristic for the species. The early postnuclear whorls seem to be more conspicuously keeled than those of the adult shell, and the summit of the succeeding turns falls immediately below the keel and is appressed to it. The base is marked by strong incremental lines, fine spiral striations and microscopic, crisscross sculpture. Aperture oval, the outer lip deflected at the posterior angle as if pinched down. There is an impressed line at the junction of the outer and basal lip. The basal lip is provided with a very slight swelling in the middle, suggesting in the merest manner a fold. Parietal wall covered with a thin callus.

Type.—U.S.N.M. No. 314046 was collected by Col. Edgar A. Mearns on the beach at Mariveles, Bataan Province, Luzon. It has 5 whorls, and measures: Height 14.7 mm; greater diameter, 29.8 mm; lesser diameter, 23.1 mm.

	Height	Greater Diameter	Lesser Diameter
Average,	13.8 mm.	28.3 mm.	21.98 mm.
Greatest,	15.2 mm.	30.5 mm.	25.1 mm.
Least,	12.3 mm.	25.3 mm.	19.6 mm.

Obba Listeri Mayae, new species

Figs. 7-9

Shell large, lenticular, acutely keeled at the periphery with a narrow umbilicus; color rather dark, the upper surface marbled, with a heavy row of rather large, elongated spots, which are more or less confluent and form a median band between the summit and the periphery. There is a tendency to the formation of two additional bands; one a little anterior to the summit, and the other a little posterior to the periphery. The rest of the upper surface is variously streaked, blotched and spotted with chestnut-brown of a little lighter color than the median band. The under surface is also marked by an almost uninterrupted broad band of brown, which is about as far anterior to the periphery as the median band on the summit is distant from the periphery. The rest of the base posterior to this band is also mottled, but paler than the dorsal surface, while the reach between the umbilicus and the dark band is wax colored, streaked with darker incremental lines. The aperture is buff; the outer lip shows the dark markings within. Nuclear whorls $1\frac{3}{4}$, well rounded, smooth; postnuclear whorls flattened on the upper surface and slightly up-turned toward the periphery. The succeeding turns are appressed to the narrow edged keel but occasionally this projects slightly beyond the summit of the succeeding turn. The postnuclear whorls are marked by retractively curved, slender, incremental lines and numerous, fine spiral threads which give to the surface a finely reticulated pattern. The fine microscopic, crisscross sculpture characteristic for the group is also represented here. In addition to this, the upper surface is marked, particularly on the later whorls, by strong malleations. The under surface is marked by incremental lines, fine wavy spiral striations, which are a

little stronger at the periphery than toward the umbilicus and the crisscross sculpture referred to above. The last part of the last whorl is conspicuously malleated below the periphery. Aperture oval; outer lip reenforced by a rather thick callus, less strong on the parietal wall, provided with a slight notch at the junction of the basal and upper lip and a fairly strong median basal tooth.

Type.—U.S.N.M. No. 314044 and 10 specimens were collected on Guntang Mountain, Lubang Island. The type has 5 whorls, and measures: Height, 10.6 mm; greater diameter, 35.5 mm; lesser diameter, 28.7 mm.

Ten additional specimens, two of which, U.S.N.M. No. 314045, are in the collection of the U. S. National Museum, and the remainder in Mr. Webb's collection, and the type yield the following measurements:

	Height	Greater Diameter	Lesser Diameter
Average,	12.0 mm.	34.5 mm.	27.5 mm.
Greatest,	13.2 mm.	36.3 mm.	28.9 mm.
Least,	10.6 mm.	32.5 mm.	25.8 mm.

This subspecies suggests in general shape the shell that I collected at Port Tilig, Lubang Island, which I named *O. listeri smithi* in Bulletin 100 of the U. S. National Museum, vol. 6, part 8, page 351. It can, however, be distinguished at once from this by the malleations present on the upper and lower surface, which are absent in *smithi*, and by its much less strong spiral striations.

I have named this *mayae* for Mrs. May Webb, the wife of the donor, at his request.

Obba Listeri Cabrasensis, new subspecies

Figs. 1-3

Shell of moderate size, lenticular, rather high, acutely keeled at the periphery with a rather broad umbilicus. The upper surface is of a deep buff-colored ground color, marbled and vermiculated with spots, splotches and dashes of brown, which are largest on the upper surface in a median line where they partly become confluent to form an interrupted broad band. There is an indication of a second band a little anterior to the summit of much lesser dots, and a third immediately above the periphery, which is even more obscure than the one at the summit. On the under surface there is a broad interrupted band of brown almost as far remote from the periphery as the band on the upper surface is from it. In addition to this, there are incremental streaks of pale brown on the buff background on the under surface. The interior of the aperture is pale buff, showing the brown markings within on the outer lip, while the peristome is faintly buff. Nuclear whorls 1.7; the first smooth and the rest marked by faint incremental lines and microscopic spiral striations. The postnuclear whorls are moderately rounded and marked by retractively curved incremental lines and rather strongly incised spiral striations. There are also malleations, which show best on the later turns on the anterior half of the whorls. In addition to this, the entire surface is marked by the fine crisscross sculpture common to the species. Periphery strongly keeled, the succeeding turns abutting the peripheral keel or sometimes passing slightly under it and allowing it to show

as a feeble thread. The under surface is strongly rounded, marked by incremental lines, the spiral striations equaling those on the spire in strength, and the fine crisscross sculpture. The posterior half also shows feeble malleations. Aperture oval; peristome rather broadly expanded and reflected and joined across the parietal wall by a heavy callus, which renders it complete and provided with a rather conspicuous tooth on the middle of the basal lip. There is also a slight notch at the junction of the basal and outer lip.

Type.—U.S.N.M. No. 314042, was collected on Cabras Island. It has 4.8 whorls, and measures: Height, 12 mm; greater diameter, 26.9 mm; lesser diameter, 21.5 mm. This and 99 additional specimens yield the following measurements:

	Height	Greater Diameter	Lesser Diameter
Average,	11.4 mm.	26.8 mm.	21.68 mm.
Greatest,	13.8 mm.	29.8 mm.	24.3 mm.
Least,	10.1 mm.	23.5 mm.	19.0 mm.

This subspecies recalls *Obba listeri recurvata* Möllendorff from the Island of Lubang, differing from it in its slightly more elevated form, more rounded upper surface, the combination of the two giving the shell a more deeply lenticular aspect. The umbilicus here too is wider.

PROCEEDINGS OF THE ACADEMY AND AFFILIATED SOCIETIES PHILOSOPHICAL SOCIETY

1059TH MEETING

The 1059th meeting was held in the Cosmos Club Auditorium, Saturday, November 11th, 1933, President O. S. Adams presiding.

The program for the evening consisted of four illustrated reports of expeditions from Washington laboratories that participated in the research program of the recent Polar Year.

The reports were presented by E. W. Eickelberg of the U. S. Coast and Geodetic Survey, J. C. Ballard of the U. S. Weather Bureau, K. L. Sherman of the Department of Terrestrial Magnetism, Carnegie Institute of Washington, and by H. B. Maris of the Naval Research Laboratory.

There was a discussion of the reports participated in by Messrs. Heck, Hazard, Gish, Humphreys and Kracek.

1060TH MEETING

The 1060th meeting was held in the Cosmos Club Auditorium, Saturday, November 25th, 1933, President O. S. Adams presiding.

Program: V. L. Chrisler: *Dependence of sound absorption upon the area and distribution of the absorbent material*.—The results of sound absorption measurements were given showing that when one surface of an enclosure is covered with a highly absorbent material it is impossible to have a diffuse distribution of sound energy. As a result the efficiency of the material is lowered. The results were also given on very much smaller areas showing that under these conditions the material may be more efficient than indicated by measurements on 72 sq. ft.